

Application Serial No. 10/820,254
Amendment Dated March 27, 2006
Reply to Office Action Dated January 25, 2006

Listing of Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A radiation generating system for treating a coating on a substrate, comprising:
 - a microwave generator operable to generate microwave radiation;
 - a lamp associated with said microwave generator for receiving microwave radiation therefrom;
 - a high voltage power supply adapted to be connected to an AC ~~[[voltage]]~~ power source and providing high voltage power to said microwave generator;
 - a current limiting device connected between said high voltage power supply and said microwave generator and adapted to limit a short circuit current being supplied to said microwave generator;
 - a fault detector connected to said high voltage power supply and operating independent of said current limiting device to provide ~~[[for providing]]~~ an error signal in response to detecting the short circuit ~~[[an excessive]]~~ current being supplied to said microwave generator; and
 - a control operative to ~~interrupt a connection of~~ disconnect said AC power source from ~~[[to]]~~ said high voltage power supply in response to said error signal.
2. (original) The radiation generating system of claim 1 wherein said current limiting device comprises a current limiting resistance.
3. (original) The radiation generating system of claim 1 wherein said fault detector comprises:
 - a current sensor; and
 - a fault circuit connected to said current sensor and producing said error signal.

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4. (original) The radiation generating system of claim 3 wherein said fault circuit produces said error signal in response to said feedback voltage exceeding a voltage limit.
5. (original) The radiation generating system of claim 3 wherein said fault circuit comprises a comparator comprising:
 - one input connected to said feedback voltage, and
 - a second input connected to a voltage reference.
6. (original) The radiation generating system of claim 3 wherein said fault circuit comprises a zener diode.
7. (original) The radiation generating system of claim 1 wherein
 - said high voltage power supply comprises
 - a high voltage transformer having a primary side adapted to be coupled to an AC voltage source and a secondary side providing high voltage power, and
 - a voltage doubler connected to said secondary side of said high voltage transformer;
 - said current limiting device comprises a current limiting resistance connected between said voltage doubler and said microwave generator; and
 - said fault detector comprises a current sensor and a fault circuit connected to said current sensor and producing said error signal.
8. (original) The radiation generating system of claim 7 wherein said current sensor produces a feedback voltage having a magnitude changing with changes in current in said voltage doubler.

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9. (currently amended) A method of preventing a high voltage power supply from providing ~~[[excessive]]~~ a short circuit current to a microwave generator driving a lamp for treating a coating on a substrate, the method comprising:

applying high voltage power to the microwave generator;

limiting a short circuit current supplied to the microwave generator using a current limiting device connected between the high voltage power supply and the microwave generator;

detecting the short circuit current supplied to the microwave generator using a fault detector independent of the current limiting device;

providing an error signal in response to ~~[[an excessive]]~~ detecting the short circuit current being supplied by the high voltage power supply to the microwave generator; and

disconnecting the high voltage power supply from an AC voltage source in response to the error signal, thereby disconnecting power from the microwave generator in response to the error signal.

Claim 10 (canceled)

11. (previously presented) The method of claim 9 wherein the current limiting device comprises a current limiting resistance connected between the high voltage power supply and the microwave generator.

12. (original) The method of claim 11 wherein providing an error signal comprises:
producing a feedback voltage having a magnitude changing with changes in the current supplied to the microwave generator; and
producing the error signal in response to the feedback voltage exceeding a voltage limit.